

Diabetes in Hispanic Americans

National Diabetes Information Clearinghouse



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Diabetes in Hispanic Americans is a serious health challenge because of the increased prevalence of diabetes in this group, the greater number of risk factors for diabetes, greater incidence of several diabetes complications, and the growing population of people of Hispanic ethnicity in the United States.¹ Estimates of the prevalence of Type 2 diabetes, far more common than Type 1 diabetes, are between 9 and 11 percent of the population, compared with 6 percent in non-Hispanic white Americans.²

Hispanic Americans are the second-largest and fastest-growing minority group in the Nation. In 1993, there were 27 million Hispanics in the United States, representing 10 percent of the population.³ By the year 2050, Hispanics will constitute 21 percent of the U.S. population. The following statistics illustrate the magnitude of this disease among Hispanic Americans.

- About 5 percent of Hispanic Americans between the ages of 20 and 44 years and 20 percent of those between the ages of 45 and 74 years have diabetes.¹ These data translate to 1.8 million Hispanic American adults with diabetes. About half of these people have been diagnosed, but the other half remain undiagnosed.
- Diabetes is two to three times more common in Mexican-American and Puerto Rican adults than in non-Hispanic whites.⁴ The prevalence of diabetes in Cuban Americans is lower, but still higher than that of non-Hispanic whites.

- As in all populations, medical risk factors such as impaired glucose tolerance, hyperinsulinemia, insulin resistance, being overweight, central obesity, and a history of gestational diabetes increase the risk of Type 2 diabetes in Hispanic Americans.
- Higher rates of the diabetes complications nephropathy, retinopathy, and peripheral vascular disease have been documented in several studies with Mexican-Americans, whereas lower rates of myocardial infarctions (heart attacks) have been found.

According to the Bureau of the Census, 1990, the majority of Hispanic Americans live in the southcentral and southwestern United States.

Major Studies of Diabetes in Hispanic Americans

Four population studies conducted in the past 15 years provide the majority of information that exists about the incidence and progression of diabetes among Hispanic Americans. The four studies are briefly described below and citations are provided in the references:

- *The Starr County Study* (Texas) conducted in 1981 assessed the prevalence of severe hyperglycemia in almost 2,500 people 15 years of age and older.⁵
- *The Hispanic Health and Nutrition Examination Survey (HHANES)* of

Table 1. Hispanic American populations in the United States and percent with diabetes

Hispanic American population ³	% of total Hispanic population ³	% with diabetes ages 20–44 ⁴	% with diabetes ages 45–74 ⁴
Mexican-Americans	64.0%	3.8%	23.9%
Central/South Americans	13.4%	n/a	n/a
Puerto Ricans	10.5%	4.1%	26.1%
Cuban Americans	4.7%	2.4%	15.8%
Other Hispanic subgroups	7.0%	n/a	n/a

SOURCE: References 3, 4, 6, 7

1982–84 is the only survey to provide information on the prevalence of diabetes in national samples of the three major Hispanic subgroups—Mexican-Americans in the southwestern United States, Puerto Ricans in the New York City area, and Cuban Americans in south Florida. Approximately 6,600 people were involved.⁴

- *The San Antonio Heart Study* (Texas), begun in 1979, assessed diabetes in over 3,000 Mexican-Americans and almost 2,000 non-Hispanic whites between the ages of 25 and 64.⁶
- *The San Luis Valley Diabetes Study* (Colorado), begun in 1984, estimated the prevalence of diabetes in Hispanics and non-Hispanic whites in two counties in southern Colorado.⁷

How Many Hispanic Americans Have Diabetes?

Mexican-Americans represent the largest Hispanic American subgroup with 64 percent of the Hispanic population. Central and South Americans represent the second largest Hispanic American subgroup, with 13 percent of the Hispanic population.

Table 1 provides a list of Hispanic subgroups, the percent of the Hispanic population they each represent, and the percent of the population that has diabetes for two age ranges.

According to HHANES data, for the age range from 45 to 74 years, 26 percent of Puerto Ricans, 24 percent of Mexican-Americans, and 15 percent of Cuban Americans have Type 2 diabetes. The rates are significantly lower for ages 20 to 44.

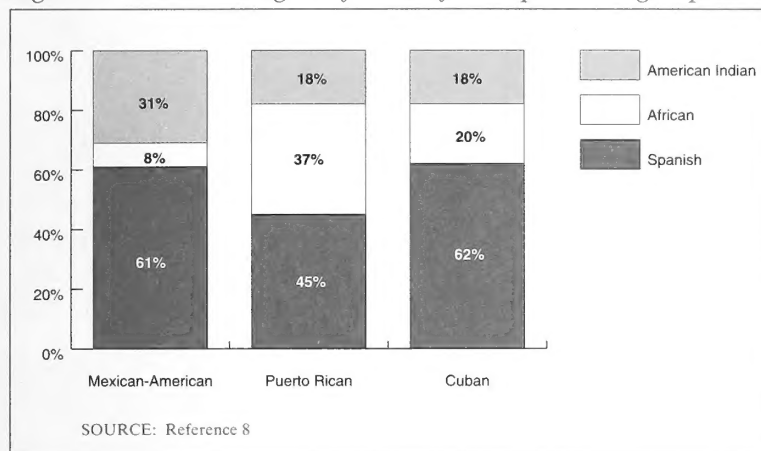
What Risk Factors Increase the Chance of Hispanics Developing Type 2 Diabetes?

The same risk factors that increase the chance of diabetes in other populations also operate in the Hispanic population.

Genetic Risk Factors

A family history of diabetes increases the chance that people will develop diabetes. The San Antonio Heart Study showed that the prevalence of diabetes among people who have first-degree relatives (e.g., parents) with diabetes was twice as great as for Mexican-Americans with no family history of diabetes.

Figure 1.—Genetic origins of the major Hispanic subgroups



Admixture with genes of Americans Indians and Africans (populations with high prevalence of diabetes) is also thought to be a factor for higher rates of diabetes in Hispanics. Hispanics, like members of all subpopulations, inherit their susceptibility to diabetes from their ancestors. Hispanics have three groups of ancestors—Spaniards, American Indians, and Africans. Both American Indians and Africans have high rates of diabetes. Figure 1 shows the genetic origins of major Hispanic subgroups.⁸

Although Cuban Americans have both American Indian and African ancestry, neither of these genetic roots contributes more than 20 percent to the current Cuban American gene pool. This fact may explain why Cuban Americans have a higher prevalence of Type 2 diabetes than non-Hispanic white Americans, yet not as high as the other Hispanic groups.

Medical Risk Factors

Impaired Glucose Tolerance

One of the best predictors—or risk factors—of Type 2 diabetes is impaired glucose tolerance (IGT). People with IGT have higher-than-normal blood glucose levels—but not high enough to be diagnosed with diabetes. Most experts believe that IGT is an early stage in the natural history of diabetes. As with Type 2 diabetes, IGT is very prevalent among Hispanic Americans.

Hyperinsulinemia and Insulin Resistance

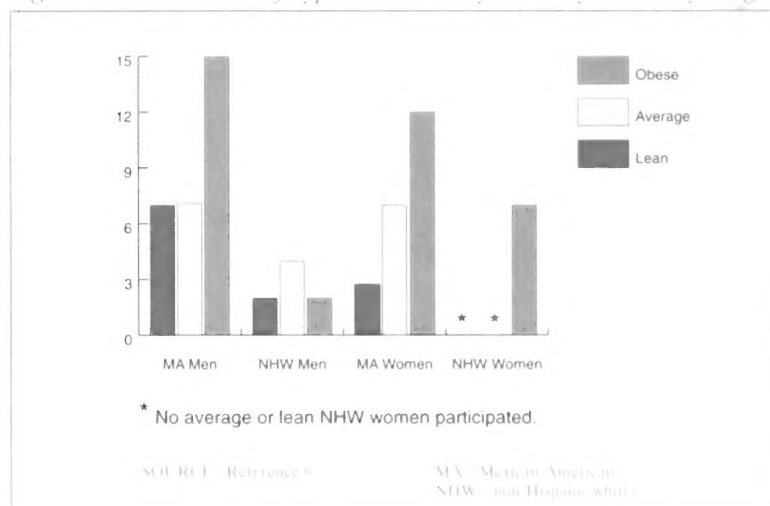
Higher than normal levels of fasting insulin (called hyperinsulinemia) and insulin resistance (an inability to use the body's own insulin to properly control blood glucose) are both hallmarks of an increased risk for Type 2 diabetes.

Obesity

Obesity is a major risk factor for Type 2 diabetes, and Hispanics are more likely than non-Hispanic whites to be overweight. It is known that the prevalence of obesity is higher in Mexican-Americans and they are known to be two to four times more likely to have Type 2 diabetes than non-Hispanic white Americans of similar weight. Figure 2 compares the prevalence of Type 2 diabetes between Mexican-Americans and non-Hispanic whites by the level of obesity.

The degree to which obesity is a risk factor for diabetes depends not just on overall weight, but also on the location of the excess weight. Central, or upper body, obesity is a greater risk factor for Type 2 diabetes, compared to excess weight carried below the waist. Mexican-Americans with upper body obesity have increased risk of Type 2 diabetes.

Figure 2.—Prevalence of Type 2 diabetes by ethnicity and body weight.



Lifestyle Risk Factors

HHANES data showed that fewer men with high levels of work-related physical activity developed diabetes. The San Antonio Heart Study also found that decreased levels of leisure-time physical activity was related to higher incidence of diabetes. Consuming more than twice the alcohol intake per week and having a higher body mass index (an indication of being overweight) also lead to a higher incidence of diabetes. In women, the lifestyle factors were being older, being from lower socioeconomic strata, avoiding sugar more often, and being 40 percent or more above desirable body weight. Leisure-time physical activity and alcohol consumption were not predictors of Type 2 diabetes as they were in men.

How Does Diabetes Affect Hispanic Young People?

Hispanic children, both male and female, have lower rates of Type 1 diabetes than non-Hispanic white children. Figure 3 shows the incidence of Type 1 diabetes by age group.⁹

How Does Diabetes Affect Hispanic Women During Pregnancy?

Gestational diabetes is a form of diabetes that develops in about 2 to 5 percent of all pregnant women and usually resolves after childbirth. Mexican-American women, especially when they are overweight, have higher rates of gestational diabetes than non-Hispanic white women.

How Do Diabetes Complications Affect Hispanic Americans?

Kidney Disease

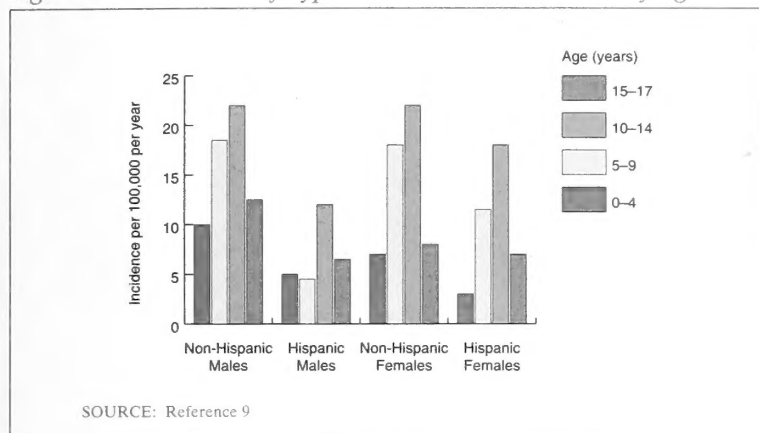
The San Antonio Heart study showed that the prevalence of clinical evidence of kidney damage (proteinuria) was more frequent in Mexican-Americans with diabetes than in non-Hispanic whites. A higher incidence of microalbuminuria, an early indicator of diabetic nephropathy, was also seen in the San Antonio Heart study comparing Mexican-Americans to non-Hispanic whites. However, the San Luis Valley study showed no difference when comparing the incidence of diabetic nephropathy between Hispanics and non-Hispanic whites or an excess of nephropathy in non-Hispanic whites.

Mexican-Americans who develop kidney failure fare better than others on kidney dialysis. According to a report from Texas, Mexican-Americans survived longer on renal dialysis than non-Hispanic white Americans.

Eye Disease

In the San Antonio Heart Study, the rate of diabetic retinopathy among Mexican-Americans was more than twice that of non-Hispanic white Americans. The Third National Health and Nutrition Survey (NHANES III) also found that Mexican-Americans had higher rates of diabetic retinopathy. However, the San Luis Valley

Figure 3.—Incidence of Type 1 diabetes in Colorado by age.



study found lower rates of retinopathy in Hispanics. The results of both the San Antonio Heart Study and the San Luis Valley study indicated that insulin use and level of glycemia were significantly associated with retinopathy.

Nerve Disease

In the San Luis Valley Diabetes Study there was no significant difference in the prevalence of diabetic neuropathy when comparing Hispanics and non-Hispanic whites.

Peripheral Vascular Disease

In the San Antonio Heart Study, Mexican-Americans with Type 2 diabetes had a higher rate of peripheral vascular disease when compared with non-Hispanic whites; however, this increased incidence was not statistically significant.

Heart Disease

Heart disease is the most common cause of death in people with diabetes, especially Type 2 diabetes. However, in the Texas and Colorado studies, Mexican-Americans had lower rates of myocardial infarctions than non-Hispanic white Americans.

How Is NIDDK Addressing the Problem of Diabetes in Hispanic Americans?

In 1996, NIDDK launched its Diabetes Prevention Program (DPP) to learn how to prevent Type 2 diabetes in people with impaired glucose tolerance (IGT) and in women with a history of gestational diabetes.

About 4,000 volunteers will be enrolled in DPP, and the study will be conducted at 25 centers throughout the United States. Because of the propensity for diabetes among some minority groups, about half of the DPP participants will be Hispanic American, African American, Native American, and Pacific Islanders. Other high-risk participants will be elderly and overweight people.

DPP will evaluate three interventions to preventing Type 2: an intensive healthy eating and exercise program, and the use of two diabetes medications—metformin and troglitazone. Researchers will tailor interventions to the cultural needs of individuals in the program. Beginning in 1996, DPP will follow participants for about 5 years, with findings to be released before 2005.

Points to Remember

- Hispanic Americans, especially Mexican-Americans and Puerto Ricans, develop Type 2 diabetes at higher rates than non-Hispanic white Americans.
- 1.8 million Hispanic American adults (more than 1 in 10) have Type 2 diabetes. Half of these individuals are diagnosed and the other half remain undiagnosed.
- Different Hispanic groups have different rates of diabetes. In the 45 to 74 age group, about 26 percent of Puerto Ricans, 24 percent of Mexican-Americans, and 15 percent of Cuban Americans have diagnosed diabetes.
- Genetic risk factors for Type 2 diabetes are diabetes in first degree family members, significant American Indian or African ancestry or both.
- Medical risk factors for Type 2 diabetes are impaired glucose tolerance, hyperinsulinemia and insulin resistance, overall obesity, central obesity, and a history of gestational diabetes.
- Higher rates of the diabetes complications nephropathy, retinopathy, and peripheral vascular disease have been documented in several studies with Mexican-Americans, whereas lower rates of myocardial infarctions (heart attacks) have been found.

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Resources from the National Diabetes Information Clearinghouse

The National Diabetes Information Clearinghouse, a service of NIDDK, provides Spanish-language diabetes education materials and information on diabetes in Hispanic Americans including the following titles:

- *Diabetes and Hispanics: Search-on-File.* An annotated bibliography of current Spanish-language diabetes education materials from other institutions.
- *Diabetes Statistics.* A descriptive review of the prevalence and treatment of diabetes in the United States.
- *Diccionario de la Diabetes (The Diabetes Dictionary in Spanish).*
- *Insuficiencia renal crónica terminal: elección del tratamiento que le conviene a usted (End-Stage Renal Disease: Choosing a Treatment That's Right for You).*

Single copies of these publications are free. Bulk orders are available for health care professionals. For more information about diabetes and Hispanic Americans and to order publications, contact

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Additional Readings

National Institutes of Health. *Diabetes in America*, 2nd Edition. National Institute of Diabetes and Digestive and Kidney Diseases, NIH Publication No. 95-1468.

Centers for Disease Control and Prevention. *Chronic Disease in Minority Populations: African-Americans, American Indians and Alaska Natives, Asians and Pacific Islanders, Hispanic Americans.* Centers for Disease Control and Prevention, Office of Surveillance and Analysis, Atlanta, GA. Pages 2-1 to 2-34.

This fact sheet, *Diabetes in Hispanics Americans*, draws on statistics reported in *Diabetes in America*, 2nd Edition, Chapter 32, Diabetes in Hispanic Americans, published by the National Institute of Diabetes and Digestive and Kidney Diseases; NIH Publication No. 95-1468, 1995. Several other citations are provided in the references.

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The National Diabetes Information Clearinghouse (NDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is part of the National Institutes of Health under the U.S. Public Health Service. Established in 1978, the clearinghouse provides information about diabetes to people with diabetes and to their families, health care professionals, and the public. NDIC answers inquiries; develops, reviews, and distributes publications; and works closely with professional and patient organizations and Government agencies to coordinate resources about diabetes.

Publications produced by the clearinghouse are carefully reviewed for scientific accuracy, content, and readability.

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